

STORMFILTER®

The StormFilter® is a proprietary BMP that has been used in Baltimore City. StormFilter® is a trademark of Stormwater Management, Inc. It consists of a premanufactured vault containing filtration cartridges. These cartridges are filled with an array of media, selected to treat the specific pollutant loadings at each site. These site-specific media options give the system the ability to remove high levels of stormwater pollutants such as sediments, oil and grease, soluble heavy metals, organics and soluble nutrients.

The StormFilter® should be sized to meet the water quality volume criteria of the Design Manual. The system typically requires 2.3 feet of head differential between the inlet and the outlet.

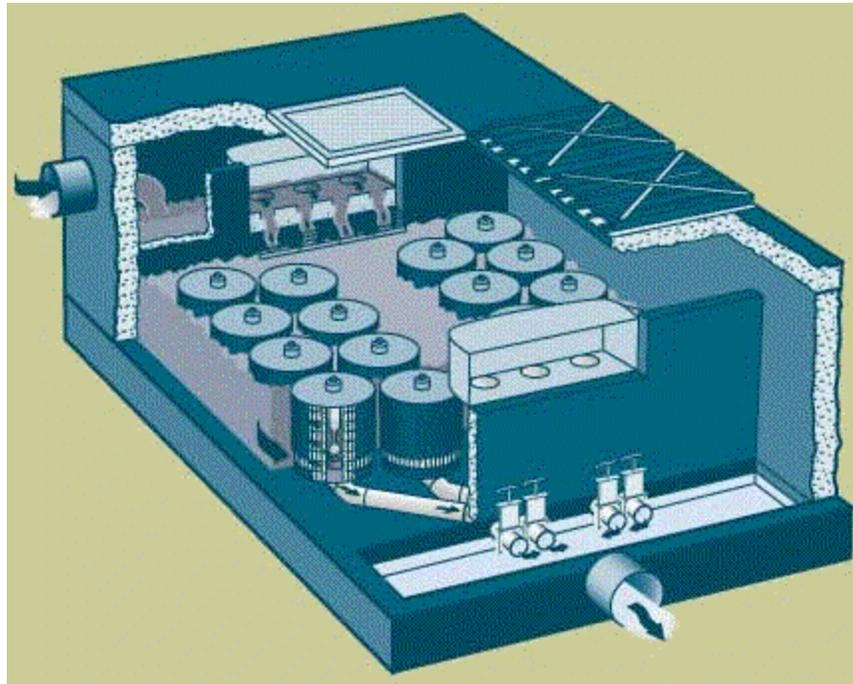


Figure 20. StormFilter

Selecting and Sizing your StormFilter

Overview

There are four different StormFilter models, Catch Basin, Linear, Precast and Cast-In-Place. The Catch Basin model is designed to replace a standard catch basin and can treat flows up to 0.13 cfs. The Linear model consists of one or two precast concrete channels that are 10' or 20' long and 2'9" in width. The Precast StormFilter can consist of one or more precast concrete vaults ranging from 6'x8' to 8'x18' in size. These units treat peak water quality design flows up to 2.0 cfs. The Cast-In-Place models are for higher flows.

The discussion here will focus on the Precast model, but similar principles apply to the other units. Precast units can be placed in series or in parallel to treat higher flows if needed. The Precast units have an internal bypass capability of 2.2 cfs. If peak flows to the system exceed 2.2 cfs, a high flow bypass is needed.

Typically, a Precast StormFilter is installed online with the storm system. It can be installed with a traffic-bearing lid for parking lot applications, and it takes up no land area. However, if detention, pretreatment, or bypassing is required, the StormFilter can be installed offline of the storm system. For examples of possible offline StormFilter configurations, see the web site at: <http://www.stormwatermgt.com/products/stormfilter>.

Design operation

The typical precast StormFilter unit is composed of three bays: the inlet bay, the filtration bay, and the outlet bay. Stormwater first enters the StormFilter vault and the inlet bay through the inlet pipe. The stormwater is then directed through a flow spreader and over an energy dissipater into the filtration bay for full treatment. The flow spreader in the inlet bay acts as a baffle, trapping some floatables, oils, and surface scum as the stormwater is directed towards the filtration bay.

Once in the filtration bay, the stormwater begins to pond and percolate horizontally through the media contained in the filter cartridges. After passing through the media, treated water that has collected in the cartridge center tube is directed into the outlet bay by an under-drain manifold. The treated water in the outlet bay is then discharged through the single outlet pipe.

Applications

The Precast StormFilter can be used for the following applications:

- Parking lots
- Roadways
- Residential developments
- Retail/commercial developments
- Business/industrial sites
- Maintenance facilities

Special Considerations

When designing the Precast StormFilter into your system, you should consider the following:

- The single or series precast units should maintain 2.3 feet of drop from the invert of the inlet to the invert of the outlet.
- Stormwater Management recommends a minimum of 4.5 feet of headroom inside the vault for maintenance access.
- For depths greater than 12 feet, contact Stormwater Management for information on additional vault requirements.

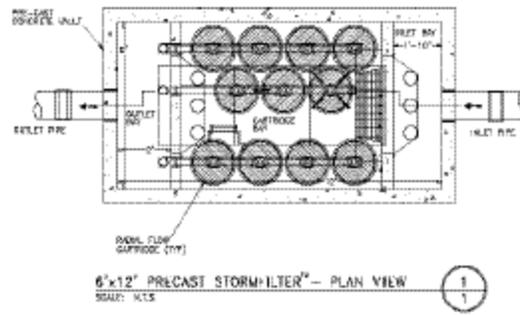


Figure 21. StormFilter Plan View